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Conditionally replicating herpes simplex virus mutant, G207 for the treatment of malignant glioma: results of a phase I trial.

Markert JM, Medlock MD, Rabkin SD, Gillespie GY, Todo T, Hunter WD, Palmer CA, Feigenbaum F, Tornatore C, Tufaro F, Martuza RL.

University of Alabama at Birmingham: Department of Surgery, USA.

G207 is a conditionally replicating derivative of herpes simplex virus (HSV) type-1 strain F engineered with deletions of both gamma(1)34.5 loci and a lacZ insertion disabling the UL39 gene. We have demonstrated the efficacy of G207 in treating malignant glial tumors in athymic mice, as well as the safety of intracerebral G207 inoculation in mice and in Aotus nancymai. We sought to determine the safety of G207 inoculation into cerebral malignant glial tumors in humans. Criteria for inclusion into this dose-escalation study were the diagnosis of histologically proven malignant glioma, Karnofsky score > or = 70, recurrence despite surgery and radiation therapy, and an enhancing lesion greater than 1 cm in diameter. Serial magnetic resonance images were obtained for volumetric analysis. The trial commenced at a dose of 10(6) plaque forming units (p.f.u.) inoculated at a single enhancing site and was completed when the 21st patient was inoculated with 3x10(9) p.f.u. at five sites. While adverse events were noted in some patients, no toxicity or serious adverse events could unequivocally be ascribed to G207. No patient developed HSV encephalitis. We found radiographic and neuropathologic evidence suggestive of anti-tumor activity and long-term presence of viral DNA in some cases.

Publication Types:

- Clinical Trial
- Clinical Trial, Phase I

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